



**UNITED STATES DEPARTMENT OF COMMERCE**  
**Patent and Trademark Office**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/250,400    02/16/99    YAMASHITA

M    35.C13319

005514  
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MM91/0720

EXAMINER

RAMSEY, K

ART UNIT

PAPER NUMBER

2879

DATE MAILED:

07/20/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trad marks**

# Office Action Summary

Application No.

09/250,400

Applicant(s)

YAMASHITA ET AL.

Examiner

Kenneth J. Ramsey

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2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 20.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

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### Prior Art Rejections

- 1) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- 2) Claims 1-8, 11-24, 27-41 and 44-46 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kawade et al (US 6,034,478 or JP 09-298029) in view of Banno et al (JP 64-19658). Column 11, line 32 through column 12, line 41 (JP Paragraph [0086] through paragraph [0090]) discloses energization forming an electroconductive film in an atmosphere comprising a gas that promotes the cohesion of the electroconductive film while heating the film by resistance. The cohesion promoting gas atmosphere comprises H<sub>2</sub>, CO or methane. The electron-emitting devices so formed are provided as an electron source of an image forming device (figure 8). It is not disclosed that the electroconductive film is heated between 50°C and 100°C prior to energizing forming. Banno et al discloses that it is desirable to preheat the substrate prior to energizing to avoid thermal shock. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to have preheated the substrate of Kawade et al prior to energization forming as in Banno et al to avoid damaging thermal shock. The determination of

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the optimum amount of preheating required to avoid cracking of the substrate would have involve routine shop practice. As to claims 11 and 12, a palladium oxide film is formed by Kawade et al, at column 25, lines 1-8 or the above cited portion of the JP disclosure. As to claim 18, since Kawade et al discloses the use of a volatile carrier for the electroconductive film which is baked out, it would have been obvious to delay the introduction of the reducing atmosphere until after initial processing has remove the volatile constituents. As to claim 19, since the preheated temperature is to avoid thermal shock at energization, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to delay energization until after the preheat temperature is reached.

- 3) Claims 9-12, 25, 26, 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawade et al and Banno et al, as above taken with respect to claim 1, in view of Talko et al EP patent 769,796. To form the palladium oxide film of Kawade et al by the ink jet droplet method of Talko et al, column 32, lines 30-41, would have been obvious to one of ordinary skill in the art since accurate placement of the film is possible.
- 4) Claims 1-8, 11-24, 27-41 and 44-46 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kawade et al (US 6,034,478 or JP 09-298029) and Banno et al (JP 64-19658) as applied to claim 1 above, further in view of Ueno et al (JP 6-

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12997). Ueno et al, paragraph [0185] discloses that using a flowing reducing atmosphere of H<sub>2</sub> gas of SCCM in a vacuum, energization time can be reduced from one minute to 100 msec. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to have employed a flowing reducing gas in the process of Kawade et al as above taken with Banno et al. Since used of a flowing reducing gas prior to energization would be a waste of gas, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to delay the application of the H<sub>2</sub> until the electroconductive film was heated by energization in order to make the most practicable use of the gas.

#### Directions for Responses

- 5) Any formal response to this communication should be directed to examiner Kenneth Ramsey, Art Unit 2879, and either

faxed to: 703-872-9318; or mailed to: Assistant Commissioner For Patents


Washington, D.C. 20231

- 6) Technical inquiries concerning this communication should be directed to Kenneth J. Ramsey, (703) 308-2324 (voice), (703) 746-4832 (fax).

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- 7) Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

kjr  
July 18, 2001

  
Kenneth J. Ramsey  
Primary Examiner